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Vol. 6 FEBRUARY, 1941 No. 2

The AMERICAN HOROLOGIST

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THE AMERICAN HOROLOGIST

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PINK G.F.		YELLOW G.F.		WHITE G.F.	
Tap	Description	Tap	Description	Tap	Description
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10	Ladies' Recessed	10	Semi Baguette	10	Semi Baguette
10	Gents' Recessed	9	18/0s Elgin Ladies'	9	18/0s Elgin
10	670 Waltham Flat Thin	6	18/0s Hamilton	6	18/0s Hamilton
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9	18/0s Elgin & Illinois	9	10/0-18/0s Elgin Ladies'	9	10/0-18/0s Elgin
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9	15/0s Elgin Flat Bottom	10	Gents' Recessed Strap	10	Gents' Recessed Strap
10	Bulova 6 AM - 6 AZ	6	Gents' Recessed Strap	6	Gents' Recessed Strap
10	26/0s Elgin	9	Gents' Recessed Strap	9	Gents' Recessed Strap
10	Gents' Recessed Long Post	10	Bulova Strap	10	Bulova Strap

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NATIONAL WATCH INSPECTION WEEK

March 22nd to and Including March 29th, 1941

National Watch Inspection Week is an annual event sponsored by the U. H. A. of A. All watchmakers and Jewelers regardless of their affiliation with this national body are urged to participate in this National event, calling the public's attention to the necessity of an annual check up on their time keepers the same as required by the Dentists and Doctors.

You, as individuals and groups, should lose no opportunity to dress your windows properly using advertising which you feel is the most advantageous to your particular type of business and specialize for one week on watch inspection and repair.

WEEK or WEAK

Yes, its this week, next week, that week, any-old-week, but with most of us its: "I should have done it LAST WEEK, or I'll put it off till NEXT WEEK", that's the trouble we're WEAK.

These days we have Apple Week, Gingham Week, Strawberry Week, Cheese Week, oh, yes we even have WESTCLOX WEEK, ah, but now your organization is going to have WATCH INSPECTION WEEK, well we have had it for several years, but what's happened to it, its been WEAK.

And the only reason Watch Inspection Week has been weak, is because you are WEAK. This idea can be made a big national feature of our organization, in more ways than one, with your help.

Your President is asking you now for the first time for your constructive comment and criticism, the first time I have asked you to grab a pen and paper and reply to me at ONCE.

Tell me — whether you think National Watch Inspection Week, put forth on a large scale, would be the result of general price-cutting in the Trade for that week. And if, your national organization sponsored such or similar feature, would the trade in general consider that the organization was giving its approval to general price cutting of repairs at this time or any other time.

How would you consider this subject?

Remember—I'm expecting your comment not NEXT WEEK but THIS WEEK, NOW. don't be WEAK, too weak to write.

J. P. SOMMER,
National President,
1524 Beaver Ave.,
N. S. Pittsburgh, Pa.

Honor Roll Trophy

This Honor Roll Trophy is awarded annually to the state having the greatest paid up membership per population prior to the National Convention and said state shall have its organization name and year date inscribed thereon and shall retain trophy for one year.

The first state having its name appear three times in any rotation shall keep the Trophy permanently. Connecticut Horological Association now holds the Trophy. Will your State take it in 1941? Why not work to that end? You can do it. Remember your membership is figured according to State population. This gives all an equal chance.

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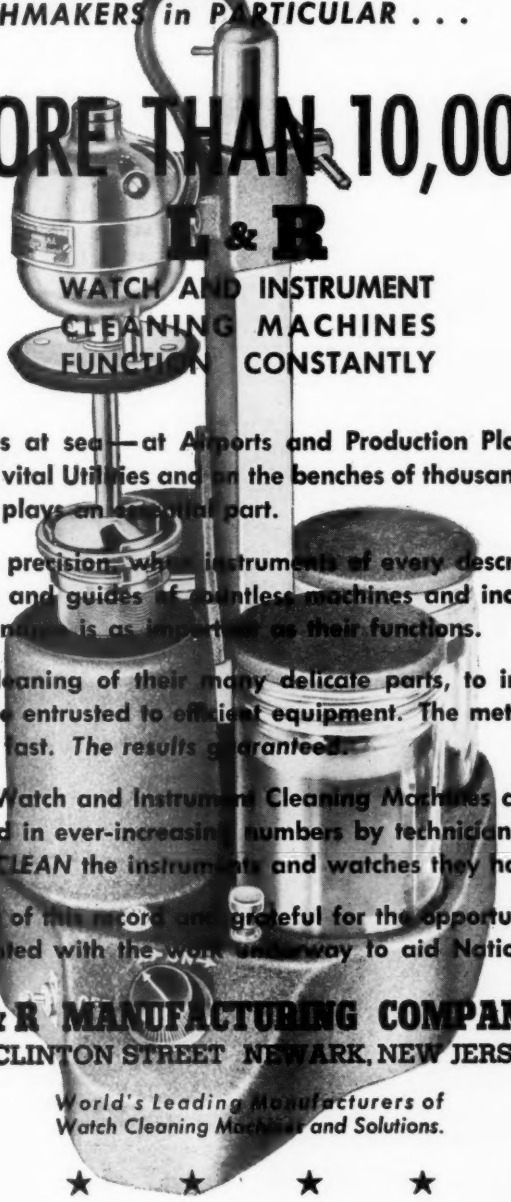

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The most certain insurance a watchmaker can take out is to use a glass of finest optical precision—a Bausch & Lomb *American-made* loupe. Your own jobber can supply you.

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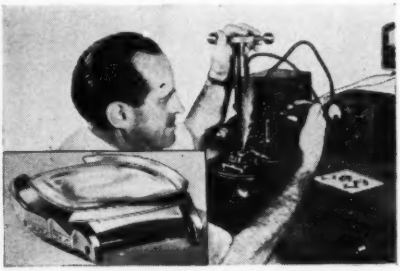

Photograph shows Perm-O-Seal Crystal Machine in operation . . . and finished job with part of flash still attached before trimming.

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"Connecticut Clockmaking"

By MR. EDWARD INGRAHAM
President E. Ingraham Clock Co.

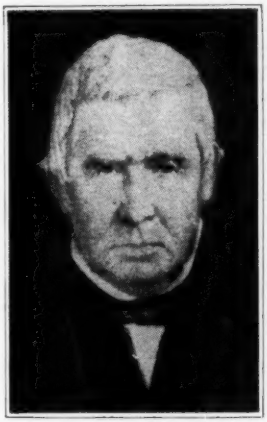
(Editors Note:

Last Fall Mr. Ingraham sent your Editor copy of an address he delivered at the 56th., Annual Banquet of The Connecticut Society of Civil Engineers. Since I consider him to be the country's foremost authority upon Early American Clock History; we immediately asked him to permit The American Horologist to reprint it serially. This he obligingly did, going even further, saying that we might add a photo or two to illustrate it. Dividing it into three equal parts; part one follows; verbatim from the Fifty-Sixth Annual Report of The Connecticut Society of Civil Engineers, two and three will follow in the March and April issues—J. E. Coleman, Clock Technical Editor.)

We are going to consider a very ancient Connecticut industry—that is, ancient so far as American industry goes. Connecticut clock making goes back as far as Thomas Nash, an original settler of New Haven in 1638. Obviously he was an Englishman and learned his trade in the old country. Like many another early clockmaker, he had another trade—that of a gunsmith. Nash is not a figure of importance except that he is the earliest of our known Connecticut clockmakers. From 1638 until shortly after 1800, clockmaking was the work of individuals who, with few exceptions, would complete one clock before starting another.

Penrose Hoopes in his "Clockmakers of the Eighteenth Century," published in 1930, lists 79 Connecticut clockmakers. This book is the result of an admirable and painstaking piece of research, and yet probably does not account for every genuine clockmaker of the period. Here and there a tall case or Grandfather's clock turns up with a new name, and probably occasionally a new maker. Clocks sometimes have names on the dials of men whom we cannot definitely identify as clockmakers. Some may have been apprentices. It is possible that sometimes the name appearing on the clock dial may be that of the person for whom the clock was made. Few of these 79 men were important as far as our history is concerned.

The Eighteenth Century men who left the greatest mark were Harland, Bernap, the Cheneys, and Terry. Harland is important for the quality of his product and the men he trained. He worked in brass, while the Cheneys made clock movements of wood. Harland trained Burnap and many others, while the Cheneys were to influence such men as John Fitch, an extraordinary Yankee genius who helped vastly in bringing about the steamboat; and Benjamin Willard, the Massachusetts clockmaker. So we shall start our Connecticut clockmaking with Harland, and give you a few facts and dates on leading men in the industry.



"ELI TERRY"

Harland was born in England in 1735 and came to America in 1773. It is said that he landed in one of the ships whose load of tea helped to stimulate the Boston Tea Party. After the party was over, he hurried to Norwick, where he made clocks and watches until his death in 1807. He is said to have turned out as many as 40 clocks and 200 watches per annum. His clocks are met with occasionally, but where, oh where, are all of the watches? They are scarce as hen's teeth. Hoopes says that accord-

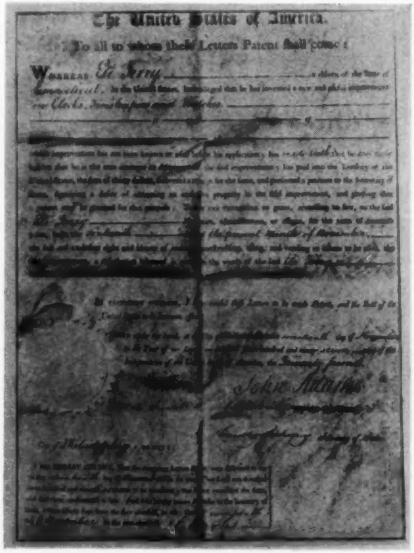
ing to tradition he had 10 to 12 apprentices. The most distinguished of these so far as we can identify them, was Daniel Burnap, Clockmaker of East Windsor and Coventry.

Born in Coventry in 1759, Burnap died there in 1838. In the quality of his clocks he excelled his master, Harland. His further contributions should give him greater renown than he has e n j o y e d. Burnap has two claims to distinction. First, that he trained an apprentice named Eli Terry, and second, that he may have formulated many of the principles of the A m e r i c a n system of "Interchangeable parts." That, if proven, should place him on a pedestal with Eli Whitney and make a true American pioneer out of him. Henry Terry, son of Eli Terry, writing of his father in 1853 says: "He came from East Windsor, Conn. and before that time had been engaged in making clocks and had been instructed in the art as it was then known and practiced, in East Windsor by Daniel Burnap, and in East Hartford by a **Mr. Cheeney.** Some of the best American clocks were made by this Mr. Burnap."

Certain it is that Burnap's apprentice—Eli Terry—used and greatly developed the system of interchangeable parts and standard gauges which was just then coming to be understood. It is apparent that few of his contemporaries understood this art, though Gideon Roberts, believed to be the first of the Bristol clockmakers, must have made interchangeable parts, inasmuch as prior to 1812 he is said to have had several hundred movements "in the works" at one time. How could this be done without interchangeable parts?

Let us take a look at Eli Terry—the most distinguished member of a distinguished clockmaking family. Eli Terry was born at East Windsor, April 13, 1772 (168 years ago) and died in Terryville in 1852. Terryville was then a "post village" of Plymouth and actually was named for Eli Terry, Jr., who was also a clockmaker, trader, and able business man. Terry, Jr., died, aged 42, but never made the contribution to the industry or community that his distinguished father did. Eli Terry was apprenticed to Daniel Burnap and there are a few Grandfather or tall case clocks still running made by Terry before 1800 in East Windsor. These have brass movements and dials, and were made in the old English tradition, using cast brass wheels and plates and hammered brass dials. The dials are peculiarly A m e r i c a n, as they were doubtless hammered out of old brass kettles gathered by some itinerant scrap dealer of the old school. Eli Terry's fame would never rest on these clocks, but is due to his well known pillar and scroll clocks, to his perfecting the system of interchangeable parts, to mass production, and to the men whom he, in turn, influenced. These accomplishments came during the dawn of the nineteenth century.

Atwater, in his History of Plymouth published in 1895 says that in 1807 Eli Terry "introduced interchangeable parts and undertook to


The United States of America.

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A new arrangement of a comprehensive chart that covers 5 pages and gives 5 different measurements for each stem. The chart covers the popular movements that are in use today such as Bulova, Benrus, A. Schild, etc., in sizes 3¼ to 13 ligne. Page 1 gives the names, shapes and sizes of the 108 series that the 72 styles will fit. Page 2 is the measurement chart and gives 5 detailed measurements for each stem. Pages 3, 4 and 5 show the 108 Newall Finger Prints that the 72 stems will fit. These charts enable the correct selection of stem and series number by the setting parts. These stems will fit 178 or more watches.

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CHICAGO, ILLINOIS

make 4000 clocks in a period of 3 years at $4.00 each." Atwater says further, "It is worthy of mention that all of the several kinds of clocks were made to gauges, so that the parts were **interchangeable**." "G a u g e s," "interchangeable parts," "mass production"—these are words of magic which have made possible the ownership by you and me of automobiles, radios, washing machines, clocks, watches, refrigeration, typewriters, tabulators, office machinery, arms, and countless other modern mechanical appliances. Men still must invent, must organize, must work by the sweat of their brows, but without these adjuncts how could you and I have these modern conveniences? Terry used mass production, interchangeable parts, standard gauges. Who discovered them? Who perfected them? The "arms industry" likes to claim this distinction for Eli Whitney. The clock industry would like to claim it for Burnap and Terry; which is right? I suspect that all of these men had a share in their development. Burnap—remember his dates 1759-1838—made too many clocks to make them one by one. He must have used some crude gauges and must have made at least some clocks with some parts interchangeable. As for Terry —remember 4,000 clock movements in three years as early as 1807. Certainly the parts were interchangeable —they must have been. Hoope says of Gideon Roberts of Bristol "by 1812 he is said to have had as many as 400 movements in process of manufacture at one time." His contemporary, John Rich, had 100 wooden clock movements in the course of construction when he died in 1812. These men were learning the use of interchangeable parts.

Now President D w i g h t of Yale wrote of Whitney about 1800, "Mr. Whitney is now employed in manufacturing muskets for the U. S. In this business he has probably exceeded the efforts not only of his country-

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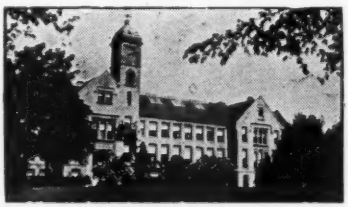
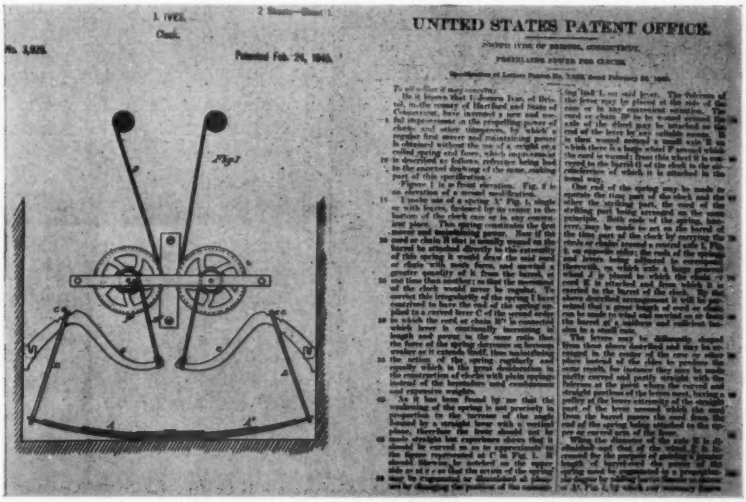


WATCHWORK
JEWELRY
STONE SETTING
ENGRAVING

Bradley Polytechnic Institute School of Horology
DEPT. B PEORIA, ILL.
Established 1886

men, but of the whole civilized world, by a system of his own invention, in which expedition and accuracy are united to a degree probably without example." His contemporaries lauded his inventiveness, particularly his invention of the cotton gin, but did not fully appreciate his contribution to the American system of interchangeable parts any more than Burnap's contemporaries appreciated what he had done. Eli Whitney's dates were



UNITED STATES PATENT OFFICE.

J. IVES PATENT

1765-1825, 6 years younger than Burnap and 7 years older than Terry, Whitney invented the cotton gin in 1793, but spent many years endeavoring to gain recognition of his patents. In 1798 he obtained a contract for 10,000 stand of arms, which it took 8 years to complete.

Dennison Olmsted, Professor of Mathematics and Natural Philosophy in Yale College, writing in 1846 of Eli Whitney, says "His machinery for making the several parts of a musket, was made to operate with the greatest possible degree of uniformity and precision. The **object at which he aimed**, and which he **fully accom-**

says "The several parts of the musket were, under this (Whitney's) system, carried along thru the various processes of manufacture, in lots of some hundred or thousand of each. In their **plished**, was to make the same part of different guns, as the locks, for example, as **much like each other as the successive impressions of a copper engraving."**

Again, Olmsted quoting an unnamed contemporary of Whitney, various stages of progress, they were made to undergo successive operations by machinery, which not only vastly abridged the labor, but at the same time, so fixed and determined their form and dimensions, as to make comparatively little skill necessary in the manual operations. Such were the constructions and arrangements of this machinery, that it could be worked by persons of little or no experience, and yet it performed the work with so much precision, that when, in the later stages of the process, the several parts of the musket came to be put together, they were as readily adapted to each other,

as if each part had been made for its respective fellow.

"Thus, Mr. Whitney reduced a complex business, embracing many ramifications, almost to a mere succession of simple processes, and was thereby enabled to make a division of the labor among his workmen, on a principle which was not only more extensive, but also altogether more philosophical than that pursued in the English method." The word "philosophical" as here used is somewhat archaic and we believe means systematic. Quoting further, "Whitney had the satisfaction of seeing not only his system, but most of his machinery, introduced into every other considerable establishment for the manufacture of **arms**, both public and private, in the United States."

So! Whitney pioneered in the manufacture of arms and made a great contribution to our entire American industry—but so, I believe, did Burnap, Terry, and the early Yankee clockmakers.

Again Henry Terry, in an article published in the **Waterbury American** on June 10, 1853, says of his father, Eli, "The business was prosecuted by him in the old way, until about the year 1802-3 when finding he could sell his clocks without being an itinerant himself he made provision for manufacturing them more extensively. At this time he made provision for 'clocks by the thousand'." Chauncey Jerome—a former employee of Terry, says that Terry "bought an old mill in 1807 in Plymouth and fitted it up to make clocks by machinery. The first 500 clocks ever made by machinery in the country were started at one time by Mr. Terry in this old mill in 1808." These were the clocks with wooden works—cheaper than brass—and in that period easier to manufacture. Hiram Camp, First President of the New Haven Clock Company, and once an employee of Terry, wrote that Terry's process of cutting the teeth of wooden wheels by machinery was said to have been "hinted to him by Eli Whitney." So Camp links the Eli's (Whitney and Terry) and they apparently were contemporaries in the development of the system now in vogue.

Terry's "pillar and scroll" clock remains one of the items most sought after among collectors of antique clocks. Terry really made the modern shelf clock possible by the changes in construction which he made in the wooden movement which made it no longer necessary to house that movement in a long case familiarly known as a Grandfather's clock. This movement he perfected and patented about 1814, and made in partnership with Seth Thomas and Silas Hoadley. In his later years he appears to have lost interest in quantity production of wooden clocks, and spent his time making a few fine brass clocks.

We now find ourselves in the early part of the Nineteenth Century, with the Connecticut clock industry growing and spreading. In various communities men took up the manufacture of wooden clocks and wooden nutmegs too, according to tradition. It is not commonly understood, but nevertheless, a fact that the wooden clock movement was the cheap movement of the day. Nor was it whittled out of wood by a Yankee farmer, whistling while he worked. These men had crude tools; saws, planes, "clockmakers lathes," and "clockmakers engines." With these they turned the pinions and cut the teeth on the wheels of the early clocks. The

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large majority of wooden movements were one day, though a few were made to run eight days. These eight-day clocks remind me of a poem by "Josh Billings":

"There wuz a man in ower toun,
Hiz naim wuz Mathyu Mears,
He wound his klok up **evry** nite
for 27 yeers.
Wun da this famus timepiece
proved,
An **ait day** klok to be,
An' a mader man than mister
Mears
Yu wood not kair tu see."

During the heyday of the wooden movements, clocks with brass movements continued to be made by various Connecticut clockmakers, but were relatively expensive, and so less in demand. Most of the early brass clocks had cast brass plates & wheels, but before the end of the wooden movement era, Joseph Ives of Bristol had perfected a movement using rolled strip brass and having roller pinions. Strips of brass were riveted together to form plates, and were used quite extensively in the 1820's by several clockmakers.

Ives was a mechanical genius, and made several interesting and unique, though no known permanent mechanical contributions to the clock industry. Yet, Hoope says that Joseph Ives is certainly entitled to the place of the Founder of the American Rolled Brass Clock industry. "Uncle Joe" Ives also invented the so-called "wagon spring" movement, which consisted of placing leaf springs similar to "wagon Springs" across the bottom of the case and connecting these with a series of rods and cords so that when the clock mechanism was wound, the leaf springs were raised to a semi-elliptical position. The tension, as the leaves flattened, ran the clock. These clocks were designed to run one, eight, and thirty days. Joseph Ives also secured patents on improvements in roller pinions, which to my mind, rather anticipated some of the principles now in use in the automotive business. Another unique clock for which he held patents was one with round tin plates and tin wheels, roller pinions, and so-called squirrel cage escapement. This clock was considered as sufficiently unique to copy when the Elgin Watch Company exhibited various type of escapements covering the history of clock and watch making during their exhibit at the New York World's Fair.

Besides Uncle Joe Ives, were his five brothers, Ira, Amasa, Philo, Shaylor and Chauncey, all clockmakers, some of whose sons also engaged in the business. Uncle Joe Ives was a mechanic and not a business man. From the time of his first entry into the clock business in 1811, until his death in 1862, he seems to have had periodic business troubles from which his friends were as periodically bailing him out. At one time Bristol men went to New York City and succeeded in obtaining his release from debtor's prison. Today Ives clocks of all types are much sought after.

(Continued next month)

WATCH MATERIAL

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DEAN COMPANY

87 Nassau St. New York, N. Y.

Legislative Address

By B. W. Heald

At Minnesota Master Watchmakers Assn. Convention

There are, I believe, two questions which the watchmakers and jewelers of Minnesota should be asking themselves. The first one is—Is the licensing law that Wisconsin has and that some of the boys in Minnesota want—Is it what you want in Minnesota?

The second question is—How can such a law be obtained if you do want it?

The situation has altered a little bit from the time before we had a licensing law in Wisconsin. Rather than tell you what the law is going to do for you, today I can tell you some of the things that the law has done for us, citing a few instances I know of from personal experience. In other words, I can show what has happened and what is likely to happen to you.

In the first place, a licensing law for watchmakers can be analyzed so that it will consist of a standard of workmanship and a standard of ethics, with a Board to enforce the same. That's what the whole thing amounts to. Do you want a standard of workmanship and a standard of ethics and entrance requirements? Do you want a code of ethics which is enforceable by a group of men who are paid to take the time to do that enforcing?

Our law went on the Statute books in April, 1937. At that time price cutting was rampant and what I might call bait advertising. I think all price advertising of watch repairing is, in the last analysis, bait advertising. We had in the City of Milwaukee fourteen price advertisers, or bait advertisers. One of the principal ones had a sign on the window about seven feet tall—a big figure "68"—and in small letters—"Your watch cleaned. Main spring, staff or jewel." This man had operated since before the N. R. A. days and the two Wisconsin watchmaker's associations had both tried to make him stop. He told them where to go, and it wasn't where anybody wanted to go. When the licensing law became effective, we sent him a written notice asking him to take the signs down which he refused to do. Well, the District Attorney sent a representative over and asked Mr. Davis to accompany him over to the District Attorney's office because the District Attorney had something he wanted to talk to him about. And of course he had no choice but to go. The District Attorney said that the question as he saw it, was whether Mr. Davis wanted to go to jail or take the signs down. And he took the signs down, within 24 hours after that. That day, he had employed two watchmakers. Thirty days later, he employed one watchmaker. And three months after that, he was out of business. The last I heard, he is somewhere in Texas. He had had to rely on bait advertising and couldn't last.

To go back into past history. In 1935, a young man attended a watchmaker's school in Milwaukee—a Vocational school. He went there for thirty days and the instructor said there was no chance to make a mechanic out of him. So he called him in the office and asked him if he didn't want to take up something else besides watchmaking. The young man said no, that he had always wanted to be a watchmaker and that was his ambition, and if they didn't want him in the school, he would leave, but that he wanted to be a watchmaker. The instructor told him that it wasn't that they didn't want him in the school but just because he felt the young man would be more suited perhaps to some other work because he didn't think he would ever make a watchmaker. So the young man left the school and started up as a watch repair man.

That was before the licensing law.

To give you another side of the picture, the Wisconsin Rehabilitation Department supplied one and one half years of training to a physically handicapped young man and sent him down to take the examination. Before he came, we received a nice letter from the Rehabilitation Department, hinting broadly that it would be nice if the boy passed. Then a representative came down and said how much they would apprpeciate it if the boy would pass the examination. Well, the boy simply hadn't had the training he needed and we couldn't pass him. We wrote the Rehabilitation Department telling them how sorry we were but it was impossible to pass the boy, that we knew they had invested in the boy considerable of the State's money, and recommended—in order to save the investment—one more year of good training. This boy is now a Wisconsin registered watchmaker after having an additional year of training. What it simply means is that a man can't just decide he is a watchmaker and start up and hang out a sign—he has to have the qualifications.

I don't want you to feel that everything is perfect in Wisconsin. We have a lot of problems—our law is not perfect. I am really trying to show you that it **is** a step forward and what it can do.

The Milwaukee Vocational School, which produced the very poor mechanic I was telling you about, was in favor of a licensing law. They had been operating twenty years and they had received a bad reputation among trade because of improperly trained men from the school. They didn't stay long enough to get the proper training. After the licensing law was passed that stopped. They had to do better work in order to pass the examination. It made all the difference in the world in that school. The instructor is competent and the school is competent. The jewelers of Wisconsin were very much prejudiced against the school but that feeling is disappearing because now the school does a good job of training watchmakers. In my own experience, I have noticed that in my store there are fewer mutilated watches coming in compared to three or four years ago. Something has made a change in the State of Wisconsin and we are taking the credit. Maybe that isn't true—maybe there are fewer mutilated watches in Minnesota. Maybe the watchmakers generally are being more careful not to turn out mutilated work. But now it seems that when I charge $3.00 or $4.00 for a repair job, I don't find I have to practically rebuild the watch in order to make it work. I don't have to spend all day making good on somebody else's job. And you can do better with watches that are in condition—that is, you can naturally do more if you don't have to spend so much time on each individual job. Which brings us pretty much to the idea of prices.

What does the law do to prices? Prices for watch repairing had been too low to permit the proper wages to go to the workmen. Prices are not up as much as they should go up, but they have increased. People are willing to pay more money in return for better repairing. Wages in turn have increased—somewhat in proportion to the increase in prices.

Last January, a young man came into my store and offered me $10.00 as his 1940 fee for license and his membership in the State association. Now, it isn't often they come in so promptly after the first of the year, and so I asked him something about it. He said, "Why shouldn't I pay this—I get it back every week." That's the attitude of one man—he gets the $10.00 back every week.

One of the problems confronting every trade is the training of young men. The future of this trade, like

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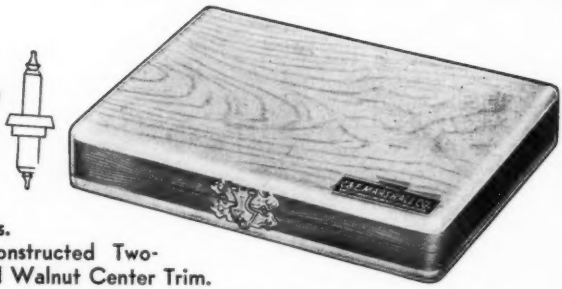

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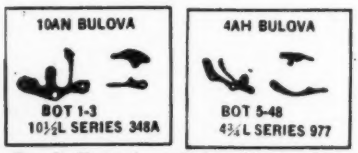

Sample illustrations of chart showing Name, Size and Model together with identifying set bridge arrangement.

These assortments were planned to make selection of stems and staffs easier and quicker. Cabinets contain 72 labeled bottles and a chart which indicates bottle number of the proper stem or staff. Refills are easy to make with corresponding series and bottle numbers on chart. Most needed stems and staffs are included in these carefully planned systems. (Sizes Baguette to 12L). The price, however, is considerably low for assortments of this kind.

CORRECT STEM OR STAFF IN A JIFFY!

In order to select a stem from this assortment it is only necessary to compare the setting bridge on the movement with the illustration on the chart, each illustration shows the model and size of movement and the bottle the stem is to be found in, in the assortment.

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2 Gross Stems - $795
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No. AH 39375. Complete fluorescent lamp, with 15 watt tube, cord and plug. For use with A.C.

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You Can't Afford To Be Without Fluorescent Daylight.

AT THIS PRICE!

Two slide adjustments and a ball joint on the standard makes it possible to use in almost every conceivable position. Beautifully finished in smooth statuary bronze with chromium finished reflector. Occupies practically no space on bench. 15 watt tube gives the light intensity of a 75 watt bulb. Order one of these lamps today!

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the future of every trade, and I might say the future of the whole country, depends upon training young men right. In the past, in Wisconsin, in fact in the whole United States, some of us have been inclined to seek cheap labor. We have taken young men, taught them nothing, paid them next to nothing, and at the end of a few years said, "Well, John, you're a watchmaker now."

We have a bona fide apprenticeship and there are a limited number of ways of entering the trade. The young man today in Wisconsin must serve an apprenticeship of four years, during which time he must complete certain specificied studies; or he must go to a trade school and it must be a good trade school approved by the State Board. I think all of you, as mechanics, know what that will mean to the trade in the future, —when they must have the training **before** becoming watchmakers rather than after.

One of the real benefits of such a licensing law—one which a lot of us are inclined to overlook—but I think is going to be the most important one of all—and that is that in ten years, or twenty years time, is the fact that the licensing law places the trade upon a professional basis, similar to what doctors, lawyers, pharmacists, etc. have for their own particular crafts. Instead of being a craft without any standards, regulations, etc., we are stepping into the professional man's class. It will take time for us, as mechanics, to adapt ourselves and feel at home as professional men.

I hope I have raised a few questions. Anyway that was my intention. So let's return to our first question, "Do the watchmakers of Minnesota want a licensing law?" That is for you to decide. "How can you obtain it if you want it?" I am something of a "foreigner" here—that is, I'm from Wisconsin—and I can't tell your legislators or tell you how to get legislation in Minnesota. I can't even tell you how your law should be written. You have a lot of Swedes in Minnesota and we have Poles in Wisconsin and everyone has a different slant on the English language. Our laws take different forms. We turn our appeals over to the Circuit Court of Dane County. In Minnesota, I understand that would be all wrong—you take yours to any county.

I should be glad, however, to give to your Legislating Committee, a few ideas incorporating improvements on our law. We aren't considering changing our law, but there are a few spots where a change of phraseology would help. For instance, we originally required two years of high school before a young man could take the examination. One didn't like that and we cut it out. Consequently we have no prerequisites for training. If we were rewriting the Wisconsin law, I think there should be some condition that the applicant possess such prerequisites of training as the Board of Examiners deem necessary—make it a Board problem.

I will be glad to help in any way I can about the phraseology of the law and give ideas on selling the law because what your licensing program will amount to is a selling job. If you can sell the trade in your State and if the Trade in the State can sell the legislators in the State and the Governor of the State, you have your law. All you need is a majority of each House and the Governor and it's solved. First, sell the trade; second, the trade can sell the legislators of the State. That must be done by the constituents of the various legislators. It would be a serious handicap if I were to attempt to sell one of your legislators. The minute I tried that, they would say "What's this guy doing over here? He's from Wisconsin." In other words, anyone

seeking legislation usually expects to benefit from it—for that reason, it would even be a mistake to have one of you boys working somewhere in the southern part of the State approach a legislator from the Duluth area.

Just one other thought—then I would like to have you ask some questions—and that thought is—Be sure and sell your legislation on its merits. If you get off that track, you will run into trouble. Ask for it as a personal favor or for the benefit of the trade, and the first thing that happens is that someone will want money for it. If you go to your legislator and ask for a personal favor, he will want to be compensated. We all respect things sold to us on their merits and a sale of the law on its merits can be made.

That's all, Mr. President. Thank you.

Setting A Balance Hole Jewel

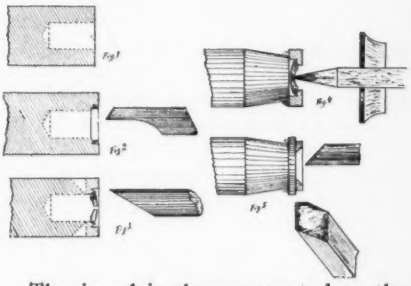
By W. H. SAMELIUS
Director Elgin Watchmakers College
Elgin, Illinois

We occasionally meet up with some obsolete watch for which material cannot be procured, making it necessary to set a balance jewel and finish the mounting to fit the watch.

First select a balance hole jewel of proper hole size to fit the pivot. The brass stock to be used should be slightly larger than the finished jewel setting. With a graver, face off end of stock and with a pointed graver, spot a center. Drill a hole into stock about 2 MM deep, the size of the drill selected must be a trifle smaller than the jewel to be set. A drill ¾ diameter of the jewel would be desirable. See figure No. 1.

A turning tool is then shaped, as in Fig. No. 2 for cutting the cavity to receive the jewel and the small groove cut close to the edge of the hole, leaving a small bezel which is to hold the jewel. The jewel is now put into it's recess and the burnishing tool, shaped as in Fig. No. 3, used for burnishing the material over to hold the jewel.

After the jewel is burnished to place, the face of the material is cut so the top of the jewel lies about .02 MM below the surface of the setting. Cut the setting off to the approximate thickness required as shown in Figure No. 3.



The jewel is then cemented to the flat face of a brass wire, it's diameter being slightly smaller than the diameter of the finished jewel. To cement the jewel and setting so the hole will be concentric, use a sharp pointed pegwood, inserted into the jewel hole, supporting the pegwood on the tool post. While the cement is still soft, the jewel will readily seek it's own center by applying a slight side pressure with the point of the pegwood. Figure No. 4. The outside diameter of the mounting can now be cut to it's proper size to fit the plate and the step cut in for end shake. This step is easily made by forming the turning tool.

Ohio Watchmakers Association State Convention

March 15th and 16th

Columbus, Ohio

AERONAUTICAL INSTRUMENT SERVICE

Aircraft Instruments

EDITOR'S NOTE—Aeronautical Instrument Service is a subject untouched by publications in the Horological field, or in fact by any publication. In September, 1938, THE AMERICAN HOROLOGIST inaugurated such an educational service via prepared illustrated lectures to be used by U. H. A. A. organizations for the purpose of broadening our members' scope of knowledge in this field, which offered additional remuneration to those far-sighted enough to avail themselves of such knowledge.

ARTICLE No. 17

(Continued from January issue)

Compensation of Airship Compasses

Five methods are suggested for compensating airship compasses:

a. By reciprocal bearings.—This method is probably the most practical with present-day equipment and is recommended for general use with lighter-than-air aircraft. A ground observer, equipped with a master compass, an azimuth sight, and some means of signaling bearings to the airship, stations himself in a position on the ground plainly marked and visible to suit the need indicated in the procedure described below. An airship observer equipped with an azimuth sight and an Aldis lamp for signaling to the ground observer should be in direct communication with the pilot. Procedure for compensating is as follows:

(1) The airship should fly at least 1 mile from the ground observer, at an altitude high enough to afford visibility between the airship and the ground observer, and at an air speed no greater than necessary to afford good directional control.

(2) The airship is headed on compass courses of 0°, 90°, 180°, and 270°, in order of convenience. When steadied on the desired course, the directional pilot calls **Mark,** at which command the airship observer flashes the Aldis lamp twice to the ground observer.

(3) The ground observer trains his azimuth sight on a predesignated point on the airship. When the airship observer flashes the Aldis lamp, the ground observer reads the bearing of the airship and signals the reading to the airship observer.

(4) The airship observer trains his azimuth sight on the ground observer's position. Upon receiving the signal from the ground observer, he sets the received bearing on his azimuth circle reciprocally to his sight index. This lays the **N—S** line of his azimuth circle parallel to that of the ground observer. The fixed index indicates the correct bearing of the airship's course.

(5) If the compass reading does not agree, compensation is affected by placing corrector magnets in the corrector boxes of the compass. The magnets are always placed across the needles of the compass and with the red end in the direction that produces the desired deflection.

(6) When this is accomplished at bearings of 0° (N.), 90° (E.), 180° (S.), and 270° (W.), the remaining deviation is observed by setting the course every 30° throughout the circle and repeating the procedure in (2), (3), and (4) above, observing at each setting the amount and direction of error and recording it on the form shown in Figure 52.

(7) Subsequent swingings may not necessitate further corrections, in which case only the deviation is recorded. If the deviation is excessive, the entire process should be repeated, removing all magnets from the corrector boxes before starting.

b. By azimuths of celestial bodies.—This method uses the known azimuth of a celestial body, such as that

of the sun or Polaris, as a reference bearing.

c. By bearings or transits.—In this method the airship is laid on bearings upon which the compass is to be corrected by reference to the ground and a map.

d. By magnetic-bearing swinging base.—This method uses a swinging base. The procedure is similar to that described for an airplane in paragraph 35. It is usually impractical for airships with envelopes attached, on account of the interference of the wind. The detached car of a nonrigid airship may be swung by this method.

e. By master compass.—The pilot's compass may be corrected or checked during flight against a master compass placed at some point on the airship that is a safe distance from any possible magnetic disturbance such as that on top of the bag.

REPAIR OF COMPASSES.—**a. Sluggish card.**—If the compass card is sluggish or tends to stick, examination should be made for—

Cracked jewel.
Dirt in jewel cup.
Damaged pivot.
Weak magnetic needles.

Magnetic needles.—The magnetic needles may become displaced, causing the card to become unbalanced. They should be carefully realigned on being adjusted. Weak magnets should be replaced by new ones.

Luminous paint and lacquering.—Luminous paint should be applied according to directions furnished by the manufacturer. It should be thoroughly dry before applying a coat of kerosene-resisting lacquer.

Filling the bowl.—The gaskets should all be sealed with shellac and dried at least 24 hours after assembling. Then the bowl may be filled with water-white, acid-free kerosene. Filling can best be accomplished by siphoning through a rubber tube and a small glass or metal nozzle. Enough air is left in the bowl to fill the expansion chamber. Kerosene may be tested for acidity with litmus paper.

Final Inspection—Before being approved for service, the instrument should be inspected for the following points:

Leakage.

Tipping. The card assembly should be free when the compass is tipped 20° from the vertical in any direction.

The liquid should be clear and not discolored.

The card should be clean, with neat and legible letters and figures, and with luminous paint intact.

The electric light assembly should be serviceable and fastened securely.

The lubber line should be aligned and tight.

Each shock absorber should carry its proper load and be centered.

All nuts and lock nuts should be tight.

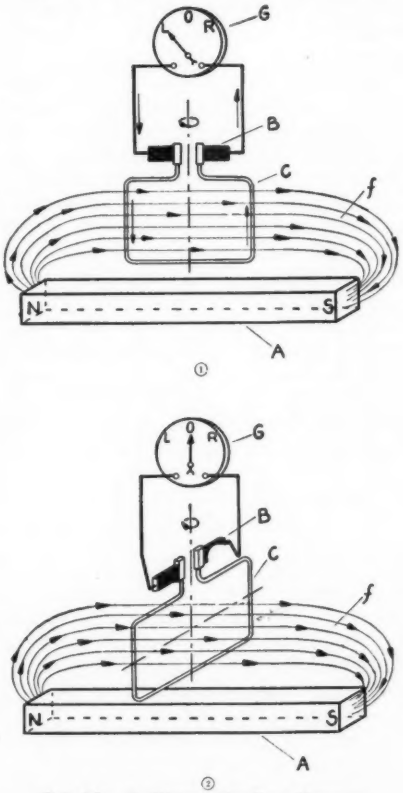
DISTANT-READING COMPASS (induction type).—Application and use.—The induction compass (see fig. 54) consists essentially of three parts, the generator, controller, and indicator.

"Distant Reading Induction Type Compass"

The generator (fig. 54 ②) is mounted in a position where the magnetic field of the earth is least distorted by interfering fields such as exist about the engine, fuel tanks, and other ferrous structure of the aircraft. The controller (fig. 54 ③) and indicator (fig. 54 ①) are so mounted on the instrument board that they are convenient for reading or for directing the course of the aircraft. When a navi-

gator directs the course for the pilot, he may be provided with a controller in addition to and working synchronously with the pilot's controller, or the pilot's controller may be omitted. One or two indicators may be used. It is, however, best to use but one indicator, sensitivity being reduced by adding another. When the aircraft is headed on the course set on the controller, the pointer of the indicator stands at zero. If the heading of the aircraft varies from that set on the controller, the pointer moves from zero in the direction of and in proportion to the turn. Though some of the indicator dials have divisions marked to the left and right from zero, such divisions are only arbitrary and do not bear any constant relation to the deviation from the set course. In fact, the amount of deflection for a certain turn is roughly proportional to the speed of the generator's rotation.

Description of principle and mechanism.—The induction type compass is essentially a magnetic compass. It is actuated by the force of the earth's magnet field and, therefore, indicates magnetic directions. It differs from the conventional magnetic compass in that magnetized needles are not employed to detect the earth's field. (See, fig. 55.) Instead, a coil of wire, c, the plane of which is vertical, is rotated about a vertical axis. The two ends of the coil terminate in diametrically opposite segments of a simple commutator. At the instant when the plane of the rotating coil is parallel to the lines of force of the earth's magnetism, a maximum difference of potential is induced between the coil's two commutator segments (a thorough explanation of the principle involved will be found in any good physics textbook under the heading of electromagnetic induction (see fig. 55 ①). The polarity of this potential depends both upon the direction of rotation of the coil and upon the relative direction of the earth's magnetic field. If the diametrically opposed brushes **B** are in contact with the communtator segments of the coil when the plane of the rotating coil is in this position, a large deflection of the galvanometer **G** occurs. Now, if the brushes are so set that they will complete the circuit of the coil and



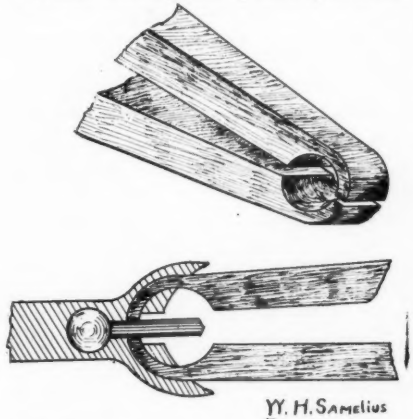
Principle of Distant Reading Compass

indicator (galvanometer) at the instant when the plane of the coil is at right angles to the earth's magnetic lines of force, no current flows, as no potential is being induced at that instant, and the indicator pointer remains at zero. If, while the coil continues to rotate, the brushes are turned slightly from the latter position, a small deflection of the pointer occurs each time the brushes come in contact with the segments (twice per revolution).

Guard Pin Stretcher

By W. H. SAMELIUS
Director Elgin Watchmakers College
Elgin, Illinois

When testing the guard pin free-



W. H. Samelius

dom and the guard pin is found to be too short, the illustrated tool will be quite handy and a time saver.

The tool may be made from an old pair of tweezers, the faces on the ends must be slightly oval and well polished to avoid cutting the guard pin in two. The ends of the tweezers can be 2 to 3 millimeters wide and the jaws should not be over .5MM thick.

By gripping the guard pin and applying pressure to the tweezers, the guard pin may be stretched sufficiently in most cases, to avoid the necessity of putting in a new guard pin.

AVIATION NEEDS
Instrument Men

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Watchmaster, Watch Rate Recorder

It's the opportunity you have awaited, the dream of every Horologist and Jeweler, is to possess industry's most modern and scientific achievement, you can possess this watch master through your skill for a word phrase or sentence to convey the thought which will describe what a legitimate watchmaker should do to a customer's watch on a complete overhaul, put in order job.

This contest is open to all members, organizations, and subscribers. Take part in this contest. The largest award ever offered to our Trade. It is easy to participate. You may be the one who has the answer.

Write in for full particulars on the National Liquidation Fund Contest, to National Headquarters, United Horological Association of America, Inc. 3226 East Colfax Avenue, Denver, Colorado.

Directed by
W. H. SAMELIUS, Chairman
Science of Horology and Technical Advisory Board

J.J.R.—I acquired an old watch, claimed to be made in Michigan and the inventor's name was Buck. What information can you give?

Answer—D. A. A. Buck was the inventor of the Waterbury Watch, the patent for which he sold to an Eastern concern. The Waterbury watch, after a stormy existence, finally won recognition and sold several million of these watches as a cheap watch. The original movement had a mainspring nine feet long. It was rebuilt with a going barrel, using the same duplex escapement. After leaving the Waterbury Company, Mr. Buck moved to Medinah, New York, becoming head of the Medinah Manufacturing Company. He died at the age of 57 in 1904.

S.H.B.—I occasionally take in an old clock for repairs and would like to refinish the movement like new. Can you suggest a good way for doing same?

Answer—At factories, brass is cleaned quickly by dipping in strong nitric or sulphuric acid, containing little or no water. The presence of water in acid makes a pickle and cause pitting. Strong nitric acid should be used in a stoneware crock for cleaning brass that has discolored from annealing or other causes. You will find this method hardly practical for an occasional clock and it would be better to use a bristle wheel and tripoli on the brass, washing the article thoroly and then buffing with rouge. Undoubtedly, you have a polishing lathe.

K.V.P.—I am at a loss to know what is considered the proper motion of a watch balance?

Answer—When the watch is fully wound, the balance should not make more than a turn and a half, or 540 degrees, nor less than a turn and one quarter, 450 degrees, and should hold this motion until the arc fails from lack of power. The balance should be observed in at least five positions and should not vary much in any one of these positions. Generally, however, the balance arc will be a little greater when running in the dial positions as compared with the pendant position as it might diminish one-eighth turn.

S.W.—Are there bushings on the market that are made for and can be used on wooden clocks? Also can I purchase wooden wheels and plates; I would like to know where they can be procured?

Answer—As wooden clocks have been off the market for 100 years, there is no material available. Would suggest, if you are not equipped to cut your own wheels, have the work done at some trade shop who make a specialty of wheel cutting. Clock plates were made from oak and the wheels and pinions were generally made from apple or pear wood, sometimes from fine hard grained walnut. The writer has seen many wheels and pinions made from box wood.

I.M.J.—I am told that many clock pinions are drilled and then driven onto the staff. How do they keep the pinion from slipping on the staff?

Answer—The portion of the staff where the pinion is to go, is enlarged by knurling with a knurling tool. These knurling marks enlarges the diameter of the staff sufficiently so the pinion may be pressed into place. It is an economical way of building a pinion. It is rapidly and cheaply done and saves waste of cutting down the stock from the full diameter of pinion to that of the staff.

K.H.O.—I have a clock for repairs which chimes on four rods. One of the rods rattle badly and does not give a clear tone, the other rod has no tone whatsoever. What is the trouble?

Answer—The rod that rattles is no doubt loose in it's clamp and should be tightened. Sometimes these rods may be tightened by tamping the material where the rod is fastened into place. Some of these rods are fastened with a screw in the base and it is possible the screw has worked loose. Sometimes these gongs are held tight to the base by means of a wedge. Driving the wedge tighter will eliminate the rattle. The gong that gives no tone may at some time or other become injured, having been heated until soft, or it may have been bent beyond the point of recovery so that the rod is permanently set, injuring the tone of the gong or destroying the tone entirely. If the latter is the case, the quickest and best way is to substitute a new rod. Tuning the rod may be done by shortening the rod in order to raise the pitch. If the pitch is to be lower, the rod is reduced in diameter at it's base.

WM. S. McCAW COMPANY
GENUINE WATCH MATERIALS & SUPPLIES
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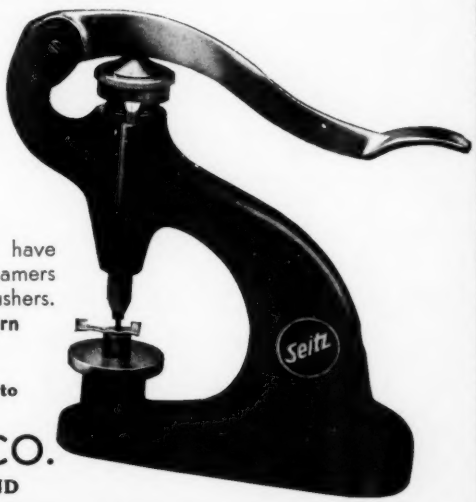
SEITZ' Friction Tool was the first on the market. Buy a SEITZ' Friction Tool and it will do its duty in ten years, as well as today. The illustration shows the simplicity and elegance of the new SEITZ' Friction Tool. It's of classical accuracy. Only SEITZ' outfits have bushers and anvils, special reamers and self-centering pump pushers.

A modern tool for a modern watchmaker!



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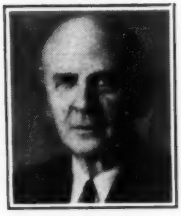
Colo. Natl. Trustee

CHAS. W. GARRETSON,
Sec'y. Northern Colo. Guild



FRED WEISS,
President Northern Colo Guild.

PAUL B. DAVIDSON,
Secretary Denver Guild

CHARLES FETTER,
Member UHAA Tech. Board

Eddie Bogage, and Charles Fetter, are co-sponsors and chairmen of our first National Gold Tournament to be held in Duluth, Minnesota during UHAA National Convention and Exhibition June 22-23-24, 1941.

They promise to draw many additional participants to the convention and will show them how the game is played. Convention City, have picked out the sportiest course in America for this event, BE THERE.

J. EDWARD BOGAGE, Mass.
Chairman Nat'l. Bd. Trustees

U. H. A. A. NATIONAL CONVENTION, DULUTH, MINNESOTA, JUNE 22-23-24, 1941

This year an exceptionally well rounded out program—not a dull moment. A complete Horological clinic arranged, as well as golf tournament, lake and stream fishing contests. Plan to be with us.

BOWMAN Technical School
Courses for Success for WATCHMAKERS
ENGRAVERS, JEWELERS
Write for free book "Your Future and Our School"
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That is the Cry of the Public Today
Why Not Follow the Slogan—
With a Full Stock of the World Famous
Sandsteel-Crosscurved Mainsprings
To be had in all sizes of American and Swiss
WM. WERKHAVEN
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COLUMBUS OHIO

At a dinner concluding the semi-annual sales convention of the Gruen Watch Company at the Netherlands-Plaza Hotel in Cincinnati, January 6 and 7, Benjamin S. Katz, President, told the sales and executive staff of the progress made by the company during the past six months.

Left to right at the speaker's table are: Josef Israels II, President of Publicity Associates, Inc.; John J. McCarthy, Vice-President of McCann-Erickson, Inc.; Joseph Kane, Production Manager, Gruen Watch Co.; John Bullock, Cincinnati attorney associated with the firm of Taft, Stetinius & Hollister; Teviah Sachs, Vice-President Gruen Watch Co.; Benjamin S. Katz, President Gruen Watch Company; Sterling Cramer, member of the Board of Directors Gruen Watch Co.; Clifford Wright, member of the Board of Directors Gruen Watch Co.; and George J. Gruen, Chairman of the Board of Directors Gruen Watch Co.

Salina Guild No. 1

Held their regular meeting January 7 for regular business and election of officers. Officers for 1941 elected are:

President, Frank S. Moore, Salina.
Vice-Pres., Doyle Gamber, Abilene.
Treasurer, C. W. Beckstrom, Lindsborg.
Secretary, Bruce Brunk, McPherson.

They voted to hold dinner meeting on January 28 in the Argis Room of the A & G Cafe

H. I. A.

At a meeting of the Examining Board of the Horological Institute of America, held in Washington, D. C. on January 4, 1941, certificates were granted to the following watchmakers:

CERTIFIED WATCHMAKER

NAME	ADDRESS	EMPLOYED BY
William E. Kline	Harrisburg, Pa.	E. G. Hoover
Ned Maltby	Elgin Illinois	Student at Elgin College
Tomlin Rankin	Long Beach, California	O. W. Dreyer
George Samuel Robinette	Batavia, New York	Gordon M. Way
Tom H. Ross	Shenandoah, Iowa	Walter V. Ross
Arnold R. Victor	Minot, North Dakota	A. B. Strauss

JUNIOR WATCHMAKER

NAME	ADDRESS	EMPLOYED BY
Myron G. Bohlen	Elgin, Illinois	Student at Elgin College
Lloyd J. Bush	Tonkawa, Oklahoma	Self
Earl W. Fenton	New Castle, Kentucky	Bovard Jewelry Store
Harold E. Hanke	Peoria, Illinois	Student at Bradley Institute
Eugene B. Heifner	Elgin, Illinois	Studend at Elgin College
Karl V. Kotas	Milligan, Nebraska	Student at Bradley Institute
Jitsuo Ono	Elgin, Illinois	Student at Elgin College
Lloyd S. Petty	Henderson, N. Carolina	Self
William T. Poland	Denver, Colorado	Student at Bradley Institute
J. R. Taylor	Kansas City, Missouri	Student at Kansas City College
Ernest R. Wilson	Kansas City, Kansas	Meyer Jewelry Co.

The next meeting of the Examining Board will be held early in March. Repaired watches for grading should be in the hands of the Secretary before February 15, 1940.

R. E. GOULD, Secretary.

Horological Guild of Philadelphia

National Affiliate of U. H. A. A.

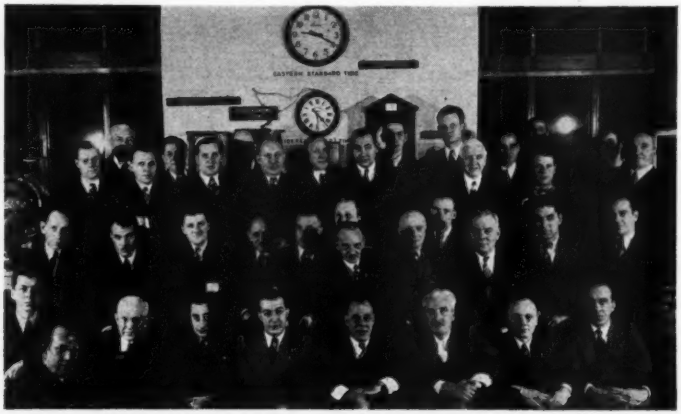
The January monthly meeting of the Horological Guild of Philadelphia, Pa., is an example for other organizations, of how to make use of local resources, to gain knowledge profitable to watchmakers.

Franklin Institute

That meeting was held January 7th at Franklin Institute, on the Parkway, Philadelphia, where the Guild's regular meetings are held; but this one was staged in the Horological Section of the Institute's Hall of Astronomy, instead of as usual in the auditorium. Robert A. Franks, who besides being a member of the Philadelphia Guild, is Chairman of the Historical Committee of The Horological Institute of America, was introduced by Herman Pedrick, First Vice President, after routine business was transacted by Robert McConway, President, and Kenneth Warner, Secretary. Mr. Franks headed the group of about sixty members and guests, taking them around among the sections of the permanent exhibit of horological, astronomical, and navigational instruments, explaining them and answering many questions from the group that indicated keen interest in the opportunity for learning something of the scientific background of horology.

Among the guests at the meeting were: Messrs. Francis Stokes and Lewis Mendelson, scientific amateurs of horology, and John J. Bowman, Chairman of the Educational Committee, Horological Institute of America, who were dinner guests of Mr. Franks at his home in Bryn Mawr, prior to the meeting.

Besides hearing Mr. Franks' talks on the exhibits, members of the group availed themselves of the privilege of visiting the fine observatory of the Institute, the excellent weather allowing clear views of the moon and



Group of Members in Attendance

several planets through the reflector and the refractor telescopes. The Philadelphia Guild is fortunate in having the cooperation of the Franklin Institute, which was founded in 1824, "for the Promotion of The Mechanic Arts, and the Encouragement of Invention and Discovery, and the Education of the Public". The work of the Institute, and its magnificient building on Philadelphia's Benjamin Franklin Parkway, both do honor to that great American, and carry on the good service to humanity that was so much a part of Franklin's life.

Rhode Island Watchmakers Association

The Rhode Island Watchmakers Association are making plans for the hiring of a room to hold meetings and have classes in watchmaking for their members and students.

Rhode Island is making progress. From now on we can look forward to them to be among the upper brackets of horological activity.

John P. Clinton, Secretary.

Arkansas Valley Guild

D. A. WELLS, President

Held Annual meeting January 8, with election of the following officers for 1941:

President, D. A. Wells of Hutchinson, Kansas; Vice President, J. O. Ussery of Newton, Kansas; Secretary, D. L. Torrence of Hutchinson, Kansas; Treasurer, Fred Logan of Newton, Kansas; Trustee, V. C. Meador, Hutchinson, Kansas.

Central Missouri Horological Guild

Held their regular meeting January 16 at Columbia, with a good attendance; however, no one was present from the northern part of the district due to a storm.

The Entertainment Committee is arranging for a dinner and program for the members and their families.

Clinton Holt, Secretary.

Group of Rhode Island Watchmakers visiting Waltham factory.
Front row: left to right, Mr. Houston, Mr. Coutu, Mr. Rogers, Mr. Chasan, Mr. Herbert, Mr. Unger, Mr. Martineau
Back row, left to right, Mr. Fournier, Mr. Benoit, visitor; Miss Wrona, visitor; Miss Clemence, Mr. Johnston, Mr. Abelkop, Mr. Clinton, Mr. Robidoux, Mrs. Martineau.

THE FINEST OILS PRODUCED ANYWHERE—at any price

FULCRUM WATCH & CLOCK OILS

WATCH OIL ..... per bottle 50c
CLOCK OIL ..... per bottle 50c
CHRONOMETER OIL ..... per bottle 65c
BRACELET WATCH OIL ..... per bottle 75c

YOUR JOBBER WILL SUPPLY YOU

Fulcrum Oil Company Franklin, Pa.

Kansas Goes Forward

A new guild was organized February 1, to be known as South East Kansas Guild. Their next meeting will be held February 18, at which time permanent officers will be elected and their work started.

Greater St. Louis Horological Guild

RAY GABLE, President

At the annual installation of officers banquet of the Greater St. Louis Horological Guild Wednesday, January 29th, at the Forest Park Hotel, Mr. Ray Gable was installed as President for the third term before about eighty-five horologists and guests. Mr. Gable is also President of the Horological Association of Missouri.

The retiring Secretary Mr. Joseph Obmann, declined renomination in order that he might give his entire time to his duties as State Secretary. Mr. Obmann is also a member of the National Executive Board.

The installation exercises were conducted by Mr. Clem Wolff, Vice President, who officiated at the last State Convention.

Among the guest speakers were Mr. Eisenbeiss of the Eisenstadt Jewelry Company, Harold Seeger of the Gruen Watch Company and Rudolph Huesgen of the Baumann-Massa Jewelry Company, Mr. Huesgen acting as toastmaster for the evening.

The new officers elected are: Ray Gable, President; Clem Wolff, Vice President; Roy Thompson. Secretary; Walter Stephenson, Financial Secretary; Harold Eaton, Treasurer; Byron Shrewsbury, Trustee.

Cincinnati Guild

The Cincinnati Guild held its regular meeting January 3rd; new officers were installed and new committees appointed by the President.

Horological Lesson No. 3 was presented. Our membership is increasing and it is felt that our Educational Program is making for a stronger Guild.

Distant Reading Induction Type Compass
Standing, left to right, Frank Flynn, Al Kappes, Elmer G. Fisher. Seated, left to right, Wm. Grogan, Elmer G. Kaising, Ruly Flaxmayer.

The Annual Grand Ball, January 11th, at Hotel Sinton was a huge success with a very large crowd with a splendid orchestra and floor show. Prizes were given to those holding the lucky numbers. Mr. F. Mende was chairman of the committee.

Elmer G. Fisher.

Horological Society of Cleveland

First meeting of the year held January the 8th at Hippodrome Restaurant. The meeting was well attended with more than a score of men present. Everyone had a good time getting acquainted, and many were present who haven't been with us for many many months. We hope they will be more regular in attendance.

Cleveland watchmakers, remember, the Society's Round Table, the first Wednesday in each month.

H. Volmar, Cor. Secretary.

Toledo Guild

By B. F. COBB

Held their regular meeting in the pond post hall. Usual round table discussion took place.

Officers for the coming year are as follows: President, Chas. Vuille; Vice President, Alex Smith, Secy-Treas, B. F. Cobb; Trustees, Fred Beitsch, Henry Vuille.

Atlanta, Georgia Horological Guild

By J. H. REED

Held their regular meeting January 14, at which time nearly all of the members signed up to take specialized courses offered by the United States Government in the handling, maintenance and repair of modern aviation instruments which courses will be put on at the Russel High School in East Point adjacent to Atlanta's municipal Airport. This will enable watchmakers with their training to cover in six months time what it would take an apprentice four years to learn. Classes which will be thrown open to members of the Guild by special governmental permission will be held two evenings each week.

Two new members were added to the Guild, and then an extensive showing of slides from the U.H.A.A. library took place.

Northwest Iowa Horological Guild

The Northwest Iowa Guild met at the Wahkonsa Hotel, January 21st. A room has been reserved for the guild's meeting night, for the entire year. Mr. O. F. Sternitzke, the guild's secretary gave a very interesting and instructive talk on the servicing and repairing of electric clocks. Slides illustrating the talk were secured from the National office.

Capitol City Horological Guild

HARRY CLARK, President

RAY WILEY, Sec'y Treasurer

Held their monthly dinner meeting January 8th at Bishops, in Des Moines.

Mr. Pierre Borel was elected Technical Director.

Several fine specimens of old watches, in good running condition, were exhibited by Mr. J. W. Loyer.

Motion pictures of the Elgin factory were enjoyed by all.

Ray Wiley, Secretary.

The Most $35.00 Will Buy—
THE BOGGS WATCH CLEANER

A Brushless, Sparkless Motor. Use light solvent or aviation gas for rinse fluids. **Mounted Eccentric to The Open Center of The Rotating Fluid.** There is **No Guessing**—run parts in the cleaning fluid until they are clean.

See your dealer or order direct.

Mfg. by

Pat. Eccentric Method.

C. L. BOGGS COMPANY. 301 Prospect Ave., San Francisco, Calif.

Syracuse Horological Guild

Held their regular annual dinner meeting January 7 with a large attendance.

H. W. STEER, President

The following officers were elected:

President, Herbert W. Steer; Vice-President, Philip J. Farrance; Treasurer, William H. Miller; Secretary, Fred C. Nhare; National Trustee, Harry E. Kirk; State Director, Harold C. Harrington.

After the election of officers, we enjoyed entertaining speeches by the executive secretary of New York State Watchmakers Association, John De Vogel, and by the head of the Watchmaking Department of the Morrisville State School of Agriculture, George J. Schlehr.

Fred C. Nhare, Secretary.

Southwestern Minnesota Watchmakers Guild

Held the last meeting of the year at Redwood Falls, Sunday, December 1st. Officers elected for 1941 were A. M. A. Hansen, President; Carl Berger Trese, Vice President; James O. Marcotte, Secretary-Treasurer.

Next regular meeting is to be held at Tracy, Minnesota.

Colorado Springs Guild

The Colorado Springs Guild held their regular monthly meeting January 29, and their first lesson in watchmaking was taken up. Samples of the men's work were examined and displayed and a very interesting session was had.

Lesson No. 2 is scheduled for the February meeting.

F. A. Pelsor, Secretary.

Albany District Horological Guild

By HENRY J. HENZEL

At the recent meeting of the guild there were fifteen in attendance, and th following officers elected for the ensuing year:

President.....Donald M. Hitchcock
First Vice-Pres.....H. M. Peterson
Second Vice-Pres.....Frank Adams
Secy-Treas.....Henry J. Henzel
State Director.....William Harnau
National Trustee.....Frank Adams

The Horological Society of New York, Inc.

Held its first meeting of the new year January 7, 1941 at the Engineering Societies Building, New York City with one of the largest turnouts assembled.

Mr. Henry B. Fried spoke on the coming program for February. A speaker from the Emergency Training for National Defense Committee.

The guest speaker for the evening was Mr. Van Laar, president of the New Jersey Watchmakers Association who spoke on Legislation and Licensing of Watchmakers in the State of New Jersey and the effect of such Licensing on its neighboring states.

Mr. Van Laar told of the concerted efforts of the entire jewelry industry in that state for the passage of such a bill, explained how the cooperation of all organizations connected with the industry were united in this common effort and predicted the passage of such legislation in 1941. He then related the probable contagious and necessarily duplicate effect on Pennsylvania and New York States. Mr. Van Laar urged the Horological Society of N. Y. to be more lenient in its choice of members. While he reminded the Horological Society of N. Y. that it was the oldest organization of its kind in the United States, their purpose could bet-

ter be furthered and its aims quicker achieved and administered if they were to throw open its arms to all watchmakers regardless of their status or age. He said that after all, every watchmaker has one thing in common that such a society as this might foster to better advantage.

The next regular meeting will take place on February 4.

H. B. Fried, Secretary.

Elgin New 1941 "America First" Watches Offered in Nation-wide Campaign

February, month of heroes, sees Elgin offering truly heroic values in a brand new series of 'America First' timepieces. More than 19 million messages—many of them in red, white and blue pages of inspirational tone—associate these watches with the reawakened interest in things patriotic to create increased opportunities for dealers everywhere.

The schedule of insertions:

LIFE MAGAZINE, full-color page, February 10.

SATURDAY EVENING POST, full-color page, February 22.

AMERICAN WEEKLY, full-color, February 9.

LOCAL NEWSPAPERS, large space, black and white, February 14.

"Such a line-up," says Mr. Schaeffer, "continues Elgin's policy of creating a planned sales peak in the early part of the year. Orders for the new 'America First' watches are already coming in to such an extent that there seems little doubt of topping the amazing successes of the last to Elgin Spring drives which surpassed all previous highs."

There are twenty-five new 1941 "America First" Elgins. Each is marked by advance styling in the new rose' cases and dials which are achieving such increased popularity with the consumer. Each contains Elgin's famous 15-jewel movement embodying two distinctive Elgin advances: the patented Elginium hairspring and the Beryl-X balance. Here, for the first time, are Elgins, in rose' retailing for less than $33.75. Priced to sell at $24.75 and $29.75, they are outstanding values.

Right now, says Elgin, is the time to capitalize on the tested tie-in material featuring "America First" Elgins. A natural demand for watches of this price exists at this time, prompted by such gift-giving occasions as Valentine's Day, birthdays, anniversaries, graduation. By displaying these new timepieces, and by making full use of reprints of Elgin advertising, direct mail letters, radio scripts, and other selling aids, each jeweler can get his share of this extra business—start the year off with unusual sales and profits.

Gruen Watch Plans for 1941

Introduction for 1941, of ninety-eight new models including an ultra-thin watch combining the features of the Curvex and Veri-thin movements, was announced at the Gruen Watch Company's recent sales convention at Cincinnati.

A record volume of magazine advertising will appear in publications reaching 118,000,000 readers in the United States and Canada, during the first half of 1941. Newspaper advertising and local radio shows are placed cooperatively by dealers.

The principal copy theme will be based on "American Fashion Firsts" in watches, with Gruen models tied-up to American fashion designs created by a board of ten top fashion designers. A special trade paper campaign on "professional" watches is planned to reach nurses, doctors, engineers and military personnel.

Benjamin S. Katz, president, told the convention that New York's new Airlines Terminal will be Gruen-timed by thirty-one centrally controlled clocks visible to an estimated 1,000,000 air passengers yearly.

McCann-Erickson is the Gruen advertising agency—John J. McCarthy, account executive.

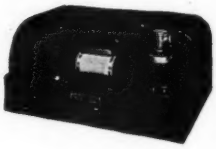
THREE STEPS

1. Automatically indicates the cause of watch troubles
2. Provides a basis for correct repair charges.
3. Times any watch in any two or more positions in 30 seconds.

to greater profits

Cut repair time and costs—satisfy customers, build patronage and profits with a Watch Master. It protects investment by checking new watches received for stock. The Watch Master is designed for unfaltering, accuracy and long life. The choice of watch manufacturers, jewelers and repair shops, everywhere. Write for price and terms.

Watch Master



American Time Products, Inc.

580 Fifth Avenue, New York, N. Y.

Distributor of Western-Electric Watch-rate Recorders.